

NOTES ON THE FAMILY *BRACHYSCCELIDÆ*, WITH DESCRIPTIONS OF NEW SPECIES.

PART II.

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(Plate VIII.)

The second part of my Notes on this group contains descriptions of gall-making coccids belonging to the genera *Opisthoscelis* and *Ascelis*, which were formed by H. L. Schrader in his second paper entitled "Further Communications on the Gall-making Coccidæ," published in the Proceedings of the Entomological Society of New South Wales, Vol. i. p. 6 (1862).

These genera he defined as follows: "*Opisthoscelis* where they have only two long posterior legs"; and "*Ascelis* where there are no vestiges of legs."

I have examined a large amount of material and have come to the conclusion that *Opisthoscelis subrotunda*, Schrader, the type of the genus, is a very distinct species; but *O. gracilis*, in my opinion, is only a variety of it.

Not having all my notes on a number of other species of this genus quite ready, I hold them over for Part III., so that in the meantime I can examine several in their later stages of development.

I have had some correspondence on the characteristics of these coccids with Mr. W. H. Maskell, who says that "The Group *Brachyscelidæ* should be confined to those coccids in which the female has the last segment produced into 'a tail,' and that the fact of producing a gall alone does not constitute a *Brachyscelid*." Acting on the advice of such a well known authority on the *Coccidæ*, I at present confine my observations to the coccids that can be placed in the above genera, considering that the peg-like anal projection of *Opisthoscelis subrotunda*, Schrader, and the more rounded tails of other "spine-gall"-making species, as well as the remarkable tubular appendage of *Ascelis* (though it is doubtful on

what portion of the coccid the latter is produced), to be well-defined tails.

In this paper I have redescribed Schrader's species, of which he gave very meagre details ; and I have added two new species to the genus *Ascelis*.

OPISTHOSCELIS SUBROTUNDA, Schrader, Trans. Ent. Soc. N.S.W. 1862, Vol. i. p. 7, pl. III. figs. 1-o.

♀. Gall 5 lines in diameter, round, dull green to yellow, growing upon leaves ; a small circular basal orifice in the centre of the brown button-like patch on the underside of the leaf ; gall chamber small, closely enclosing the coccid, the walls thick, showing a radiating structure when cut across.

♀. Larvæ pale red, with semitransparent legs and antennæ ; enclosed in an oval white egg-sac, on emerging from which they are very active ; antennæ stout at base, composed of 4 (?) short joints surmounted by a bristle as long as the combined joints ; slightly lobed in centre of head ; body short, shield-shaped, rather pointed at the apex, with a distinct marginal rim, forming a fine serrate edge extending right round from the head to the tip of abdomen, a little more oval than round, abdominal segments narrow but distinct ; legs stout, long, tarsi terminating in two finely hooked claws ; anal segment with a long slender filament half the length of the whole insect, produced on either side.

♀. Coccid (1st stage) reddish-yellow, almost oval but slightly constricted towards the tip of the abdomen, closely covered with fine downy hairs forming a fringe round the margin ; dorsal eyes small, round, black, and shining ; the centre of the ventral surface of the second segment or fold with a pear-shaped orifice, which in live specimens under the microscope shows a regular throbbing movement ; on either side of the mouth a short pointed three-jointed leg ; the 2nd thoracic segment with a similar pair of legs slightly longer ; the 3rd thoracic segment with longer stouter legs, with elongated tibiæ.

♀. Coccid 4 lines long, $3\frac{1}{2}$ broad ; reddish-brown, covered with close fine hairs ; dorsal surface rounded, broadest at the top, tapering to the anal tip, segmental divisions distinct ; ventral

surface with the apex forming a rounded protuberance in the centre and a fold-like margin on the outer edges down to the anal appendage, of six broad segments, the 2nd and 3rd thoracic segments without any signs of legs, the 3rd with two long legs, the femora small but stout, the tibiæ medium, of uniform thickness, tarsal joint as long or longer than tibia, of a uniform thickness, rounded at tip, without any sign of tarsal claw; anal appendage a rounded peg-like tail, which fits into and closes the basal orifice of the gall.

♂. Galls unknown to me. Schrader says that they are small conical galls often growing upon the same leaves as the female ones. In only one instance have I found conical galls upon the same leaves; these were very numerous, more rounded at the apex than those described and figured by Schrader, and appeared much more like aborted female galls.

♂. Coccid: Schrader says, "of a red colour, with anal setæ, the body, legs, and antennæ very hirsute; length about two lines."

Hab.—The female galls are very plentiful, generally found on the leaves of young trees either growing singly or in twos or threes upon the leaves. At Sutherland, near Sydney, I found them very plentiful, and full grown in February and March on *Eucalyptus capitellata*.

ASCELIS PRÆMOLLIS, Schrader, Trans. Ent. Soc. N.S.W. Vol. i. p. 7, 1862, pl. III. figs. p-x.

♀. Gall round, from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in diameter, green to dull yellow, growing upon the leaves either singly or in groups of two or three, often quite aborting the leaves; basal orifice small, circular, opening on the underside of the leaf; sometimes there is a false chamber, irregular in form (between the outer surface of the leaf and the gall), into which the basal orifice opens. Gall solid, with transverse structure, the inner coating thin and horny, closely fitting round the coccid.

♀. Larva pale yellow, roundish-oval; head rounded in front, with short conical 4-jointed antennæ, eyes small, round, black, close behind the base of the antennæ; legs long, slender, terminating in two hooked claws at the tip of the tarsi.

♀. Coccid 2 lines long, varying much in size ; no signs of legs, eyes, or antennæ ; body consisting of a shapeless, irregularly round, wrinkled, pale yellow mass ; anal appendage stout, cylindrical, dark ferruginous, surrounded at the base by a flat ferruginous ring, apex of anal appendage tubular, with three slender finger-like projections, which always hold a small lump of gummy secretion, which, together with the tips of the caliper-like fingers, fit into and closely fill up the basal orifice.

♂. Larvæ living with the female larvæ in the female galls, in which they come to maturity ; I have generally found from twenty to thirty in a mature female gall remaining long after the female larvæ have escaped, pale pink to salmon red, rounded at the head and tapering to a point at the tip of the abdomen ; antennæ stout at base, short, 4-jointed, and pointed at apex ; abdominal segments broad and distinct, legs stout, long, and terminating with two hooked claws.

♂. Coccid with the head and thorax crimson to reddish-salmon colour ; legs and antennæ semitransparent ; dorsal eyes black, globular, small, and very close together ; antennæ short, composed of nine elongate oval joints slightly stalked at the base, with the last two somewhat tapering, thickly clothed with short stout hairs ; front of head square across, constricted at the eyes, which are placed behind the base of the antennæ, swelling out into a rounded lobe behind them, truncate at the junction with the prothorax ; the latter narrow ; mesothorax broad, with the central lobe large, almost square, horn-coloured, and marked with two crescent-shaped lines in front ; metathorax sloping at apex ; wings opaline, semiopaque, with broad stout longitudinal and transverse discoidal veins, the whole closely covered with fine short hairs ; legs long, slender, and very hairy : abdomen semitransparent, long, slender, lance-shaped ; 1st joint longest, slightly constricted at the apex ; 2nd and 3rd medium, shorter, cylindrical ; 4th half the length of third ; 5th and 6th very small and short ; 7th lance-shaped, pointed, and moved readily from side to side during life.

Hab.—The galls are plentiful in the neighbourhood of Sydney, growing upon the leaves of *Eucalyptus corymbosa*, and in my

experience only upon this species; they vary much in size, as also does the female coccid. Last March I found large numbers at Sutherland, the *Opisthoscelis* growing upon *E. capitellata* close by.

ASCELIS SCHRADERI, n.sp.

♀. Gall an irregular rounded blister $\frac{1}{2}$ inch in diameter, two lines in thickness, forming a cavity or blister in the centre of the leaf; pale yellow to reddish-brown; apical orifice small, cylindrical on the upper side of the leaf, the anal appendage filling up the orifice but not coming to the surface of the leaf.

♀. Larva pale yellow, flat, round, with the abdomen coming to a point at the tip; eyes round, wide apart, with an angular mark behind them and a similar mark below at the junction of the abdomen and thorax; abdominal segments narrow, but sharply defined; antennæ very short; legs rudimentary.

The larvæ at this stage have left the female gall and are half-buried in the young leaves; the leaf tissue apparently grows over them, as perfect galls very little bigger than the coccids are numerous on the leaves.

♀. Coccid pale yellow, 2-3 lines in diameter, an irregular wrinkled the rounded mass without any vestiges of legs, antennæ, or eyes; anal appendage more slender than in *A. premollis*, surrounded with a similar band or ring at the base, and truncate at the tip, without the finger-like appendages, and apparently solid, not tubular.

♂. Larva pale yellow to bright crimson, the antennæ 4-jointed, short and stout, coming to a point at the tip, situated on either side of a projecting angular forehead in front of the eyes, the latter small and globular, placed behind the base of the antennæ, wide apart; the body swelling out behind the eyes and tapering down to the apex of the abdomen; legs short, slender, covered with short hairs, and terminating in two finely hooked claws; abdominal segment and outer margins of the others rounded and fringed with fine hairs, with fine hairs upon the lower half of the segments.

♂. Coccid differing in no distinctive character from that of the previous species.

This *Ascelis* gall was known to Schrader, who mentions them in his paper previously quoted as "large flat swellings on both sides of the leaves"; but he evidently considered it to be another form of *A. præmollis*. Though both grow upon *Eucalyptus corymbosa* in the same localities, yet I have never found both growing on the same tree.

ASCELIS ATTENUATA, n.sp.

♀. Galls very small, $\frac{1}{2}$ line in diameter; reddish-brown, flat and swelling out on either side of the leaf, with the apical orifice on the upper side as in the former species.

♀. Coccid a pale yellow wrinkled mass, with a very long and slender cylindrical anal appendage, truncate at the tip, surrounded at the base by a broad dark brown ring or band.

Hab.—Thornleigh, N.S.W.; in January; on the foliage of *Eucalyptus piperita*.

EXPLANATION OF PLATE VIII.

Ascelis præmollis, Schrader.

Fig. 1. —Female galls.

Fig. 1a.—Male larva.

Fig. 1b.—Female coccid, viewed from above.

Fig. 1c.—Female coccid, viewed from the side.

Fig. 1d.—Male coccid with the eyes round, and only just divided from each other.

Opisthoscelis subrotunda, Schrader.

Fig. 2. —Female galls.

Fig. 2a.—Female coccid in first stage.

Fig. 2b.—Female coccid, full grown (front view).

Fig. 2c.—Female coccid (back view).

Ascelis Schraderi, n.sp.

Fig. 3. —Galls.

Fig. 3a.—Female in first stage when entering the leaf.

Fig. 3b.—Male larva.

Fig. 3c.—Female, viewed from above.

Ascelis attenuata, n.sp.

Fig. 4. —Female galls.

Fig. 4a.—Female coccid, viewed from the side.